

1 **Q. What is driving the increased demand for natural gas service?**

2 A. There are a number of factors driving the increased demand for natural gas. First,
3 with economic growth in the region, population in PSE's service territory has
4 increased. Most new housing units, especially single family homes, are equipped
5 with natural gas. Second, even with recent increases in the price of gas, the cost
6 of heating with natural gas continues to have an advantage over the cost of
7 heating with electric or oil; hence, conversions from electric and oil to gas
8 furnaces in older housing stock are expected to continue.

9 **Q. How does this increased demand affect the energy delivery system?**

10 A. For both the gas and electric systems, this increased demand results in the need
11 for additional system capacity and maintenance projects, as well as additional
12 resources to meet customer requests. Large capital investments, such as the
13 \$342 million, 194 mile, high pressure "Everett Delta" gas main project, are
14 required to provide for growth and to maintain reliable service to existing
15 customers during peak conditions. Benefits from investments of this type were
16 made apparent during the mid-December 2005 "cold snap" when below freezing
17 temperatures were experienced for multiple consecutive days. PSE's need to take
18 cold weather actions (such as curtailing gas deliveries to some customers) were
19 greatly reduced from what had been necessary in previous years with similar
20 system demands.

1 **E. Details Regarding PSE's Electric Infrastructure Investment Needs**

2 **Q. Please describe the Company's electric infrastructure that requires**
3 **maintenance or replacement spending.**

4 A. Electric infrastructure includes PSE-owned transmission and distribution poles,
5 cables, conductors, transformers, circuit breakers, structures, switches, controls
6 and associated apparatus needed to provide electric service to PSE's customers.

7 Reliability, replacement and remediation projects include work designed to
8 improve system components which can be impacted by trees, animals,
9 environmental degradation, age, compliance initiatives and projects that arise due
10 to unplanned events such as car-pole accidents, dig-ups or equipment failure.

11 PSE has several well-established maintenance and refurbishment programs
12 including cable replacement and substation maintenance. Maintenance and
13 replacement strategies are based on the age and condition of the equipment. But,
14 maintenance requirements often increase for aging equipment. PSE uses planned
15 inspection and maintenance programs to identify or mitigate problems in a
16 proactive manner.

17 **Q. What is the magnitude of the Company's electric infrastructure maintenance**
18 **or replacement spending?**

19 A. PSE has, on average, made investments (other than new customer connections) of
20 approximately ~~\$81~~79 million in electric infrastructure each year since 2001. PSE

1 Cables are selected for remediation using a prioritization process in which
2 Company-wide outage history is reviewed. Those neighborhoods or commercial
3 areas with repeated outages are reviewed for remediation. Factors evaluated are:
4 number and frequency of outages due to cable failures, number of customers
5 affected, physical condition of the cable, and length of the outages.

6 **Q. What is the status of this program?**

7 A. The underground cable remediation program is an ongoing reliability and cost
8 control initiative. 2005 marked the sixteenth year of the cable remediation
9 program, resulting in a total of over 1,821 miles of cable remediated out of the
10 estimated 4,800 miles of HMW cable installed Company-wide.

11 In order to maintain the objective of less than 1,500 cable outages per year, the
12 program was expanded in 2004. For example, the annual cable outage rate in
13 year 2001 was 1,076 outages. By 2003 the annual outage rate had risen to ~~1,333~~
14 1,383 outages. Accelerating the program in 2004 and 2005 lowered the outage
15 rate to 1,139 outages in 2005. While the total miles of HMW cables have been
16 reduced, the failure rate of the remaining cable is increasing. As a result, PSE
17 continues to monitor the performance of these cables to determine if the
18 remediation program should be expanded further.